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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,918	05/22/2001	Yoshihiko Ikemoto	SHM-01801	8734

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EXAMINER	
KUMAR, SRILAKSHMI K	
ART UNIT	**PAPER NUMBER**
2675	14

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/862,918	IKEMOTO, YOSHIHIKO	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following office action is in response to Amendment B, filed November 20, 2003. Claims 1, 6, 7 and 8 have been amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickson et al (US 5,191,416) in view of Hanko et al. (US 6,493,041), further in view of Tanaka et al (US 6,069,602).

As to independent claim 1, Dickson et al disclose video display apparatus displaying an image having a first frame frequency at a second frame frequency that is lower than said first frame frequency (col. 1, lines 65-col. 2, line 8), said video display apparatus comprising:

a synchronization signal generation circuit for generating a synchronization signal of said second frame frequency; Dickson et al do not disclose a signal generation circuit for generating a synchronization signal of said second frame frequency. Dickson et al do disclose in col. 1, lines 40-45, where the system uses readily available video processing equipment. Hanko et al disclose in Fig. 1, item 130, and in col. 8, lines 22-29, a digitizer/decoder, which is also a signal generator. It would have been obvious to one of ordinary skill in the art that the video processing equipment of Dickson et al could have easily been the signal generator of Hanko et

al. The signal generator is advantageous as it indicates times at which pixels, rows of pixels and arrays of pixels are available.

a conversion frequency detector for calculating a number of frames making up an unit block at each of said frame frequencies and a number of frames to be thinned based on said first frame frequency and said second frame frequency (col. 5, lines 40-54);

a frame memory for storing a first frame having said first frame frequency; Dickson et al do not disclose a frame memory for storing. Hanko et al disclose a frame memory in Fig. 1, item 140. It would have been obvious to one of ordinary skill in the art that Dickson et al would have memory for storing as the system would need to store the pixel values for comparison between different frames.

Dickson et al do not disclose, a difference detector for comparing intensity data of each dot on said video display apparatus of a second frame which is currently input to said video display apparatus with intensity data of each dot of said first frame which is stored in said frame memory and which is immediately before said second frame, and detecting a difference between said two frames; Hanko et al disclose a difference detector (Fig. 2, item 15) for comparing intensity data of each dot on said video display apparatus of a second frame which is currently input to said video display apparatus with intensity data of each dot of said first frame which is stored in said frame memory and which is immediately before said second frame, and detecting a difference between said two frames as is disclosed in col. 9, lines 31-62. It would have been obvious to one of ordinary skill in the art that the detector of Hanko et al could have easily been incorporated into that of Dickson et al as the detector aids in disclosing or calculating movement.

Dickson et al do not disclose, a difference adder for counting a number of dots for a case in which said difference of said intensity data detected by said difference detector is greater than a prescribed value; Hanko et al disclose a difference adder in col. 9, lines 63-col. 10, line 7. It would have been obvious to one of ordinary skill in the art that the adder of Hanko et al could have been easily incorporated into that of Dickson et al as the adder aids in disclosing or calculating movement.

a movement detection/judgment section for distinguishing whether or not a count value detected by said difference adder is below a prescribed value and outputting a signal indicating that thinning of said second frame is possible, when said count value of said difference adder is below said prescribed value (col. 5, lines 64-col. 20, lines 28); and

a frame thinning section for thinning said second frame, in a case in which said signal indicating that frame thinning of said second frame is possible is output from said movement detection/judgment section and also a signal indicating that said number of frames to be thinned is output from said conversion frequency detector (col. 5, lines 64-col. 20, lines 28).

wherein said second frame is selected and determinate frame, and wherein selection of said second frame for thinning by said frame thinning section is based on said signal indicating that thinning of said second frame is possible and said signal indicating said number of frames to be thinned, whereby occurrence of non continuities in said image when displayed a said second frame frequency is reduced.

Dickson and Hanko et al do not disclose where frame thinning is accomplished at the second frame. Tanaka et al disclose a liquid crystal display device with a section for frame thinning, where the second frame is thinned as is shown in col. 12, lines 59-65. The second

frame thinning is possible as disclosed in col. 12, lines 36-53, where the CPU thins self produced image data or externally supplied image data, and where the LCD controller sequentially reads the image data from the RAM and supplies the image data to the data driver.

It would have been obvious to employ the method of frame thinning as shown by Tanaka et al as both Dickson and Hanko et al disclose frame thinning, further frame thinning is advantageous as is shown by Tanaka et al in col. 2, lines 33-40, where the frame thinning prevents flickering which can hinder the displayed images when the frame frequency is lowered.

As to independent claims 6 -8, limitations of claim 1, and further comprising, a frame thinning means for executing frame thinning of said second frame (Fig. 2); and a frame thinning stopping means for stopping the frame thinning operation of said frame thinning means within a current block including said first frame and said second frame (Fig. 2, col. 5, line 31-col. 6, line 28), in a case in which, if, as a result of an execution of frame thinning by said frame thinning means, a total number of thinned frames has reached said number of frames to be thinned which is output from said conversion frequency detector; comparing said intensity data of said first frame with that of said second frame; thinning said second frame when said intensity data of said two frames are the same (Fig. 2, col. 5, line 31-col. 6, line 28).

As to dependent claim 2, see limitations of claim 6, above.

As to dependent claim 3, limitations of claim 1, and further comprising, wherein an area detector for detecting movement of an image within a prescribed area on said video display apparatus is provided, and detection results of said area detector being output to said movement detection/judgment section (col. 2, lines 13-18).

As to dependent claim 4, limitations of claim 1, and further comprising, wherein said video display apparatus is a plasma display apparatus. Although Dickson et al and Hanko et al do not disclose where the display apparatus is one of a plasma display apparatus, it would have been obvious to one of ordinary skill in the art as the systems of Dickson et al and Hanko et al disclose video signal processing which could have been used in any type of display.

As to dependent claim 5, limitations of claim 1, and further comprising, wherein said video display apparatus is a liquid-crystal display apparatus. Although Dickson et al and Hanko et al do not disclose where the display apparatus is one of a liquid crystal display apparatus, it would have been obvious to one of ordinary skill in the art as the systems of Dickson et al and Hanko et al disclose video signal processing which could have been used in any type of display.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 6, 7 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Srilakshmi K. Kumar** whose telephone number is **(703) 306 5575**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703 305 47000377.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703 305 9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 4700.

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
February 5, 2004

DENNIS-DOON CHOW
PRIMARY EXAMINER